

# Estimating the number of lobsters used for bait

Florida Fish and Wildlife Conservation Commission  
Fish and Wildlife Research Institute

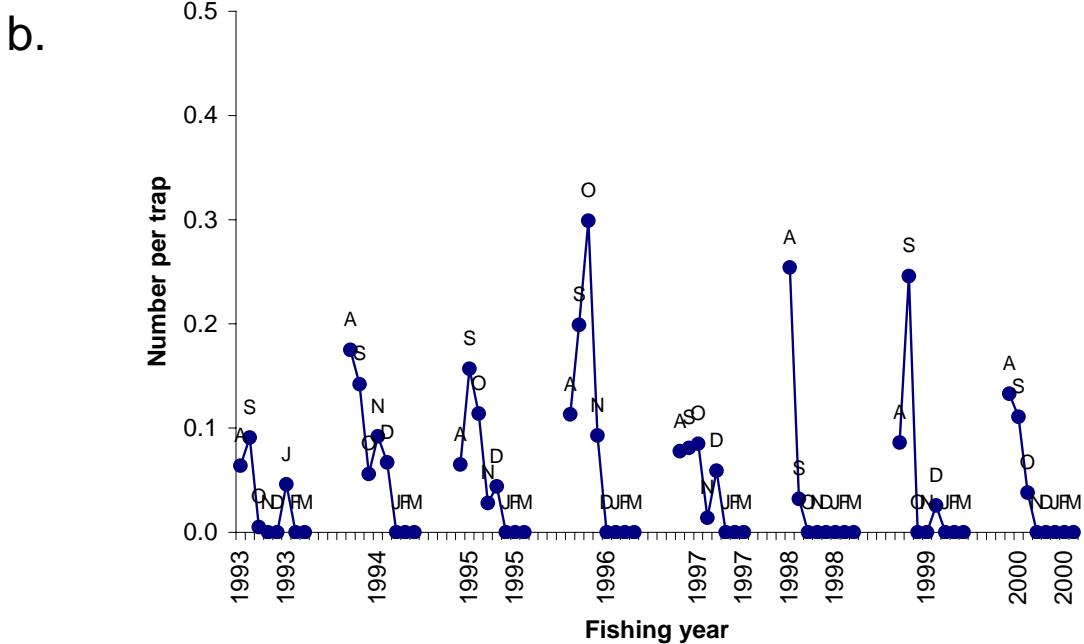
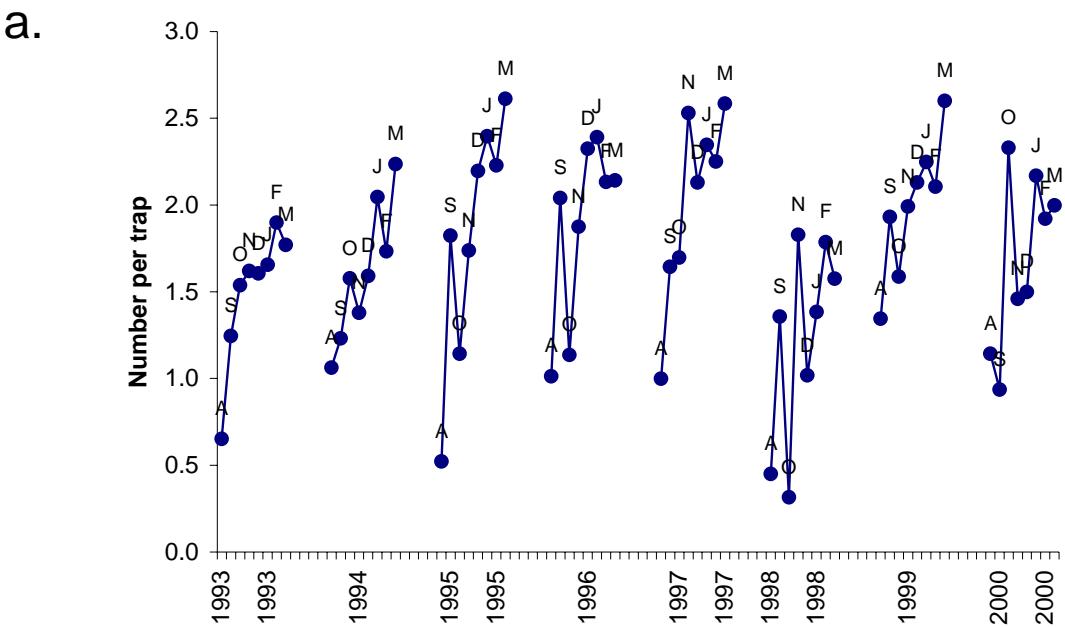


The number of lobsters used for bait depends upon the number of traps that are deployed not merely the number of trap certificates and the number of animals used as bait per trap.

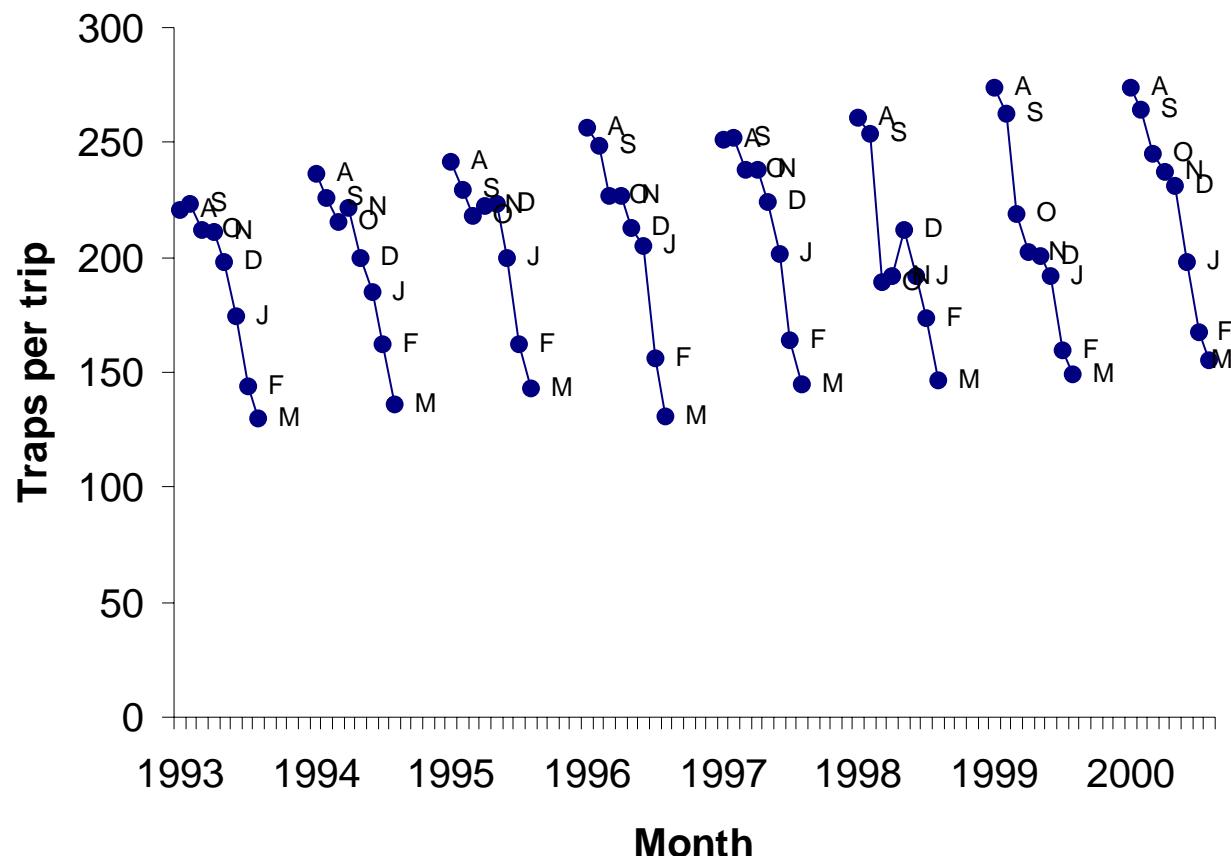
The source of the number of animals used for bait comes from the observer program (1993-2000).

The source of the number of traps deployed comes from trip ticket program or from the Trip Interview Program. For this assessment, we are using the trip ticket program.

Numbers of bait lobsters per trap by month by shorts (a) or legal-sized lobsters (b).

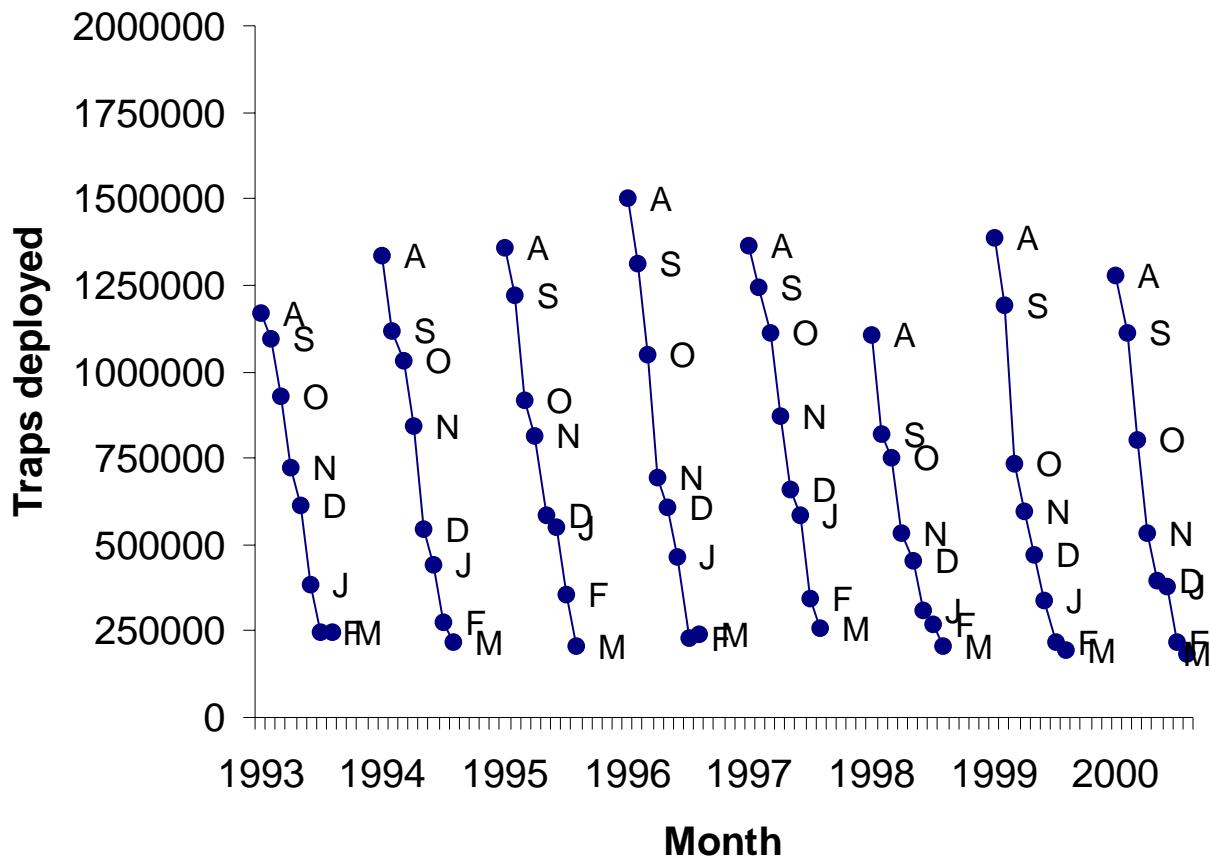


The number of traps deployed can be calculated from either the average number of traps per trip or the pounds per trap. Preferably the number of traps used on trips would come from the Trip Interview Program but currently there were too few TIP interviews (less than 10) with the number of traps in any given month .

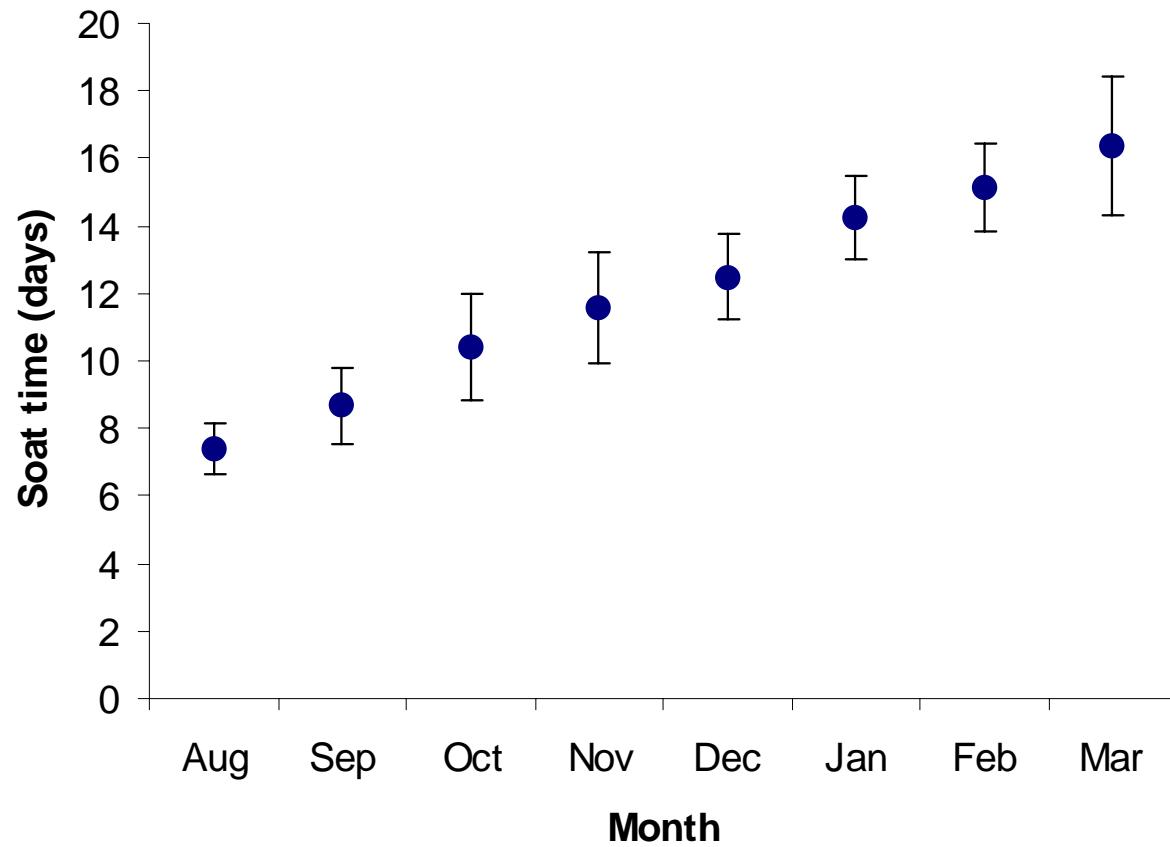


## Monthly number of traps deployed

$$Hauls_{m,s} = (Traps / Trip)_{m,s} * Trips_{m,s}$$



# Soak time in days by month from trip ticket data 1992-2003



Estimating the number of lobsters that died from being used as bait based on the average monthly soak time and a four week average mortality of 26.3% (Hunt et al. 1986).

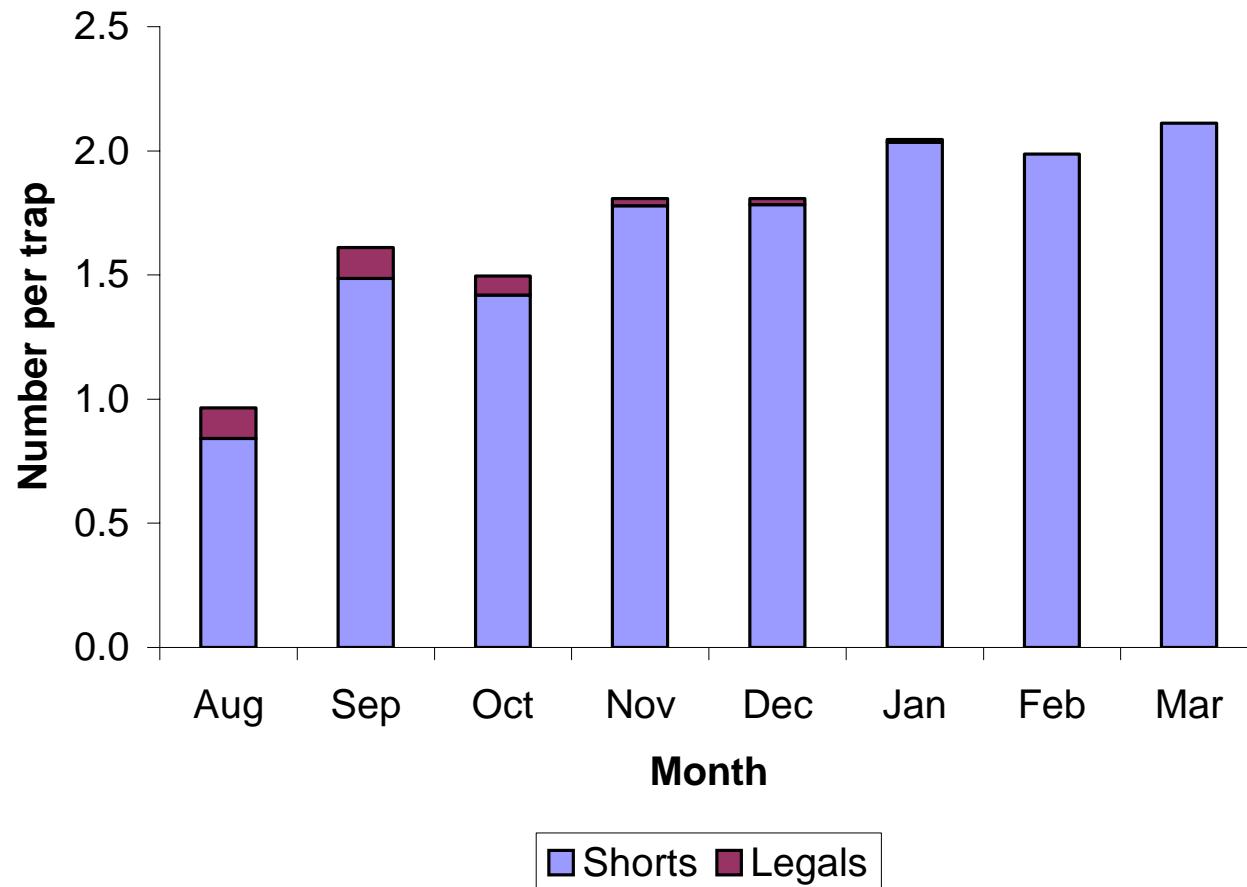
## Trap hauls based on traps per trip and trap trips

Fishing	Bait usage					Bait Mortality				
	Year	Trips	Trap Hauls	Shorts	Legals	Total bait	Ave bait / trap	Shorts	Legals	Total bait
	1993	26,913	5,404,947	7,249,093	196,740	7,445,833	1.38	840,867	18,816	859,684
	1994	27,648	5,813,182	8,327,950	564,078	8,892,028	1.53	896,633	49,857	946,490
	1995	27,834	6,007,512	9,329,294	432,931	9,762,225	1.63	1,058,069	38,700	1,096,769
	1996	27,269	6,100,181	10,217,705	809,598	11,027,303	1.81	1,149,456	75,244	1,224,700
	1997	28,368	6,428,750	11,696,858	352,518	12,049,376	1.87	1,348,162	33,612	1,381,774
	1998	20,945	4,449,118	4,515,582	307,680	4,823,262	1.08	557,662	26,473	584,135
	1999	22,681	5,130,075	9,242,918	424,836	9,667,755	1.88	990,149	36,500	1,026,649
	2000	20,463	4,892,815	7,328,784	324,114	7,652,898	1.56	816,780	27,897	844,677
	Average	25,265	5,528,322	8,488,523	426,562	8,915,085	1.59	957,222	38,387	995,610

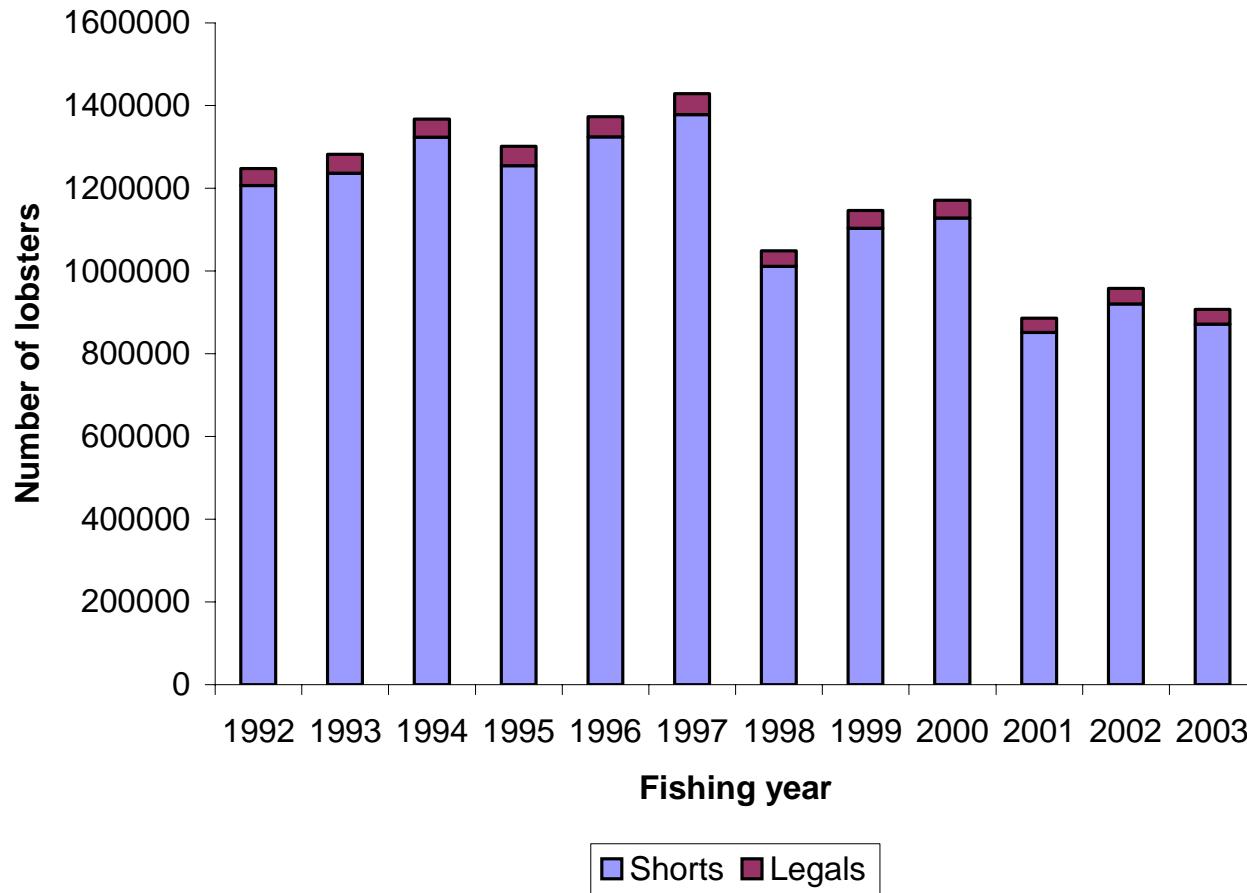
Estimating the number of lobsters that died from being used as bait based on the average monthly soak time and a four week average mortality of 26.3% (Hunt et al. 1986).

## Trap hauls based on pounds per trap and trap landings

Fishing	Bait usage					Bait Mortality			
	Year	Landings (lb)	Trap Hauls	Shorts	Legals	Total bait	Ave bait / trap	Shorts	Legals
1993	4,914,854	6,912,440	9,412,086	240,837	9,652,923	1.40	1,106,343	23,154	1,129,497
1994	6,717,022	7,572,416	11,274,700	657,778	11,932,479	1.58	1,268,177	59,187	1,327,365
1995	6,529,937	7,496,858	11,661,568	544,654	12,206,222	1.63	1,330,304	48,875	1,379,179
1996	7,187,142	7,572,084	12,827,430	991,900	13,819,329	1.83	1,481,828	93,535	1,575,363
1997	7,060,925	7,841,694	14,335,531	425,702	14,761,233	1.88	1,663,038	40,654	1,703,692
1998	4,839,664	5,371,201	5,691,472	347,164	6,038,637	1.12	715,676	29,889	745,565
1999	6,857,239	6,532,515	12,063,283	508,835	12,572,119	1.92	1,330,000	43,908	1,373,908
2000	4,717,167	6,443,577	9,830,983	391,251	10,222,234	1.59	1,135,969	33,841	1,169,810
Average	6,102,994	6,967,848	10,887,132	513,515	11,400,647	1.62	1,253,917	46,630	1,300,547



Monthly pattern in bait usage in commercial trap fishery



Estimated bait mortality in commercial trap fishery